

Attachment C. Data Management

C.1 Background

The Department of Defense (DoD) Business Transformation involves an ongoing effort to standardize and streamline operational processes, correct long-standing inventory weaknesses, and help analyze whether enabling technology effectively supports performance of the DoD mission. Enabling all functional communities with ready access to accurate, complete, and up-to-date real property asset information is a must. The goals of the I&E Community are timely, accurate, and reliable data, when and where needed, together with streamlined enterprise-wide business processes that enhance the support of the DoD Business Transformation and to the Warfighter.

A Real Property Inventory (RPI) workshop was held in October 2003 to discuss the Business Transformation with respect to the RPI initiated by the Installations & Environment (I&E) Domain. Following this meeting, I&E focus groups were formed to represent the initial capabilities of the I&E Community, e.g., RPI; Real Property Management (RPM); and Environment, Safety, and Occupational Health (ESOH). These focus groups constituted the initial Community(s) of Interest (COIs) to support the Domain's transformation effort.

For purposes of the Business Enterprise, COIs are defined as collaborative groups of users who must exchange information in pursuit of their shared goals, interests, missions, or business processes. To accomplish this, they must have a shared vocabulary for the information they exchange. In addition, COIs provide an organization and maintenance construct for data to ensure that data goals are realized.

The I&E Community and COIs oversee the development of the Data Management Strategy process as it evolves and is implemented within the I&E Domain and DoD-wide COIs to ensure its continued success. The COIs will accomplish this by forming close relationships with key stakeholders and subject matter experts (SMEs) in the Military Services and Defense Agencies that provide or use real property data.

The strategy to manage the I&E enterprise data has become increasingly more important over the last few years. Continued breakthroughs in network technology and the Internet have made data available across applications, departments, corporations, and enterprises. Despite these developments, several major problems remained unsolved:

- Data is not visible to all users who need it;
- Data resides in incompatible formats; and
- Data cannot be systematically managed, integrated, unified, or cleansed.

There are also numerous information and data conflicts. Data is redundant or out-of-date, and often cannot be accessed because of formatting differences. These conflicts seriously impact the DoD's ability to obtain the data and information necessary for decision-making in both an effective and timely manner.

C.2 The Need for a Data Management Strategy

Information and data are valuable assets to an organization. As a result, a management strategy should be implemented to guarantee the reliability and integrity of an organization's information assets. Data should be managed as an asset of the enterprise, not as a part of the application that processes it. Consistent and reliable data provides the user with the basis for accurate and efficient decision-making.

The real property data in the Military Services and Agencies is maintained in different locations, in different systems, and in different formats. It is processed and validated through different business rules and according to different validation criteria. See Figure C-1. Centralized reporting and decision-making is understandably hampered²¹. In addition, manpower, time, and cost involved in data calls and the subsequent "data scrub" into a common format for analysis and reporting requires resources that should be targeted to more mission-critical tasks. Timeliness of data from the aspect of the enterprise also becomes an issue. This is due to the time required to "scrub" the data before making it available to the user, and the fact that rather than real time, the data represents a point in time based on the time of the data call.

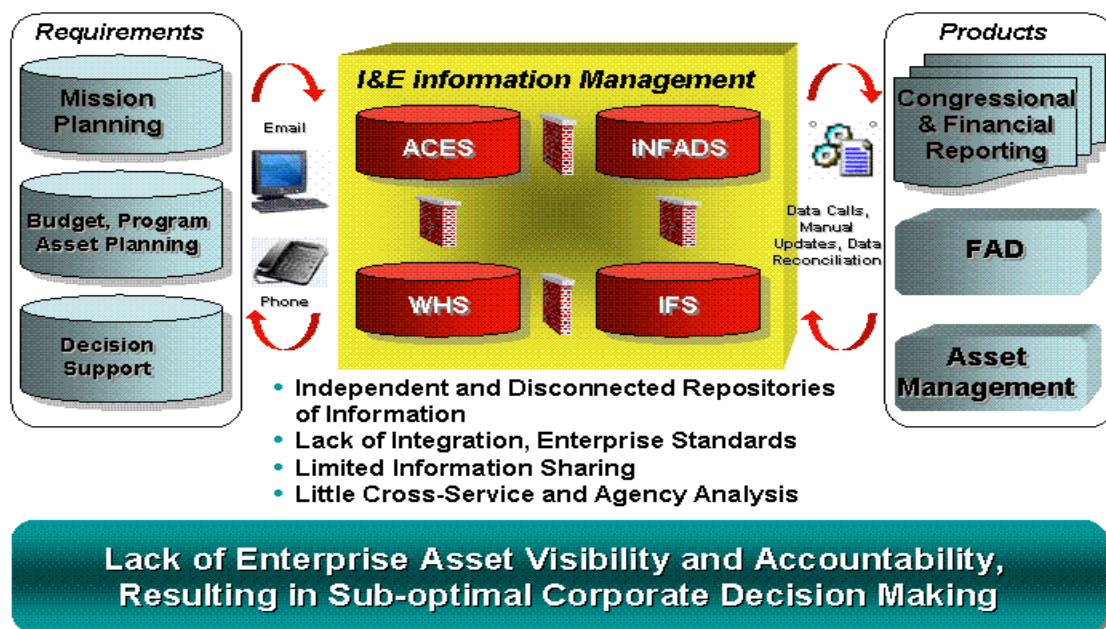


Figure C-1: Current "As-Is" Environment Supporting Real Property

A data management strategy providing a methodology for data standards at the enterprise level addresses the information and data lifecycle of the enterprise from identification and analysis

²¹ Assessment of DoD Real Property Information Systems, prepared for the Office of the Deputy Under Secretary of Defense for Installations and Environment, August 8, 2001, p. 3.

through user discovery and applications processing. One of the Department's CIO goals, as confirmed by the Deputy Secretary of Defense in Management Initiative Decision (MID) 905²², is to populate the network with all data (intelligence, non-intelligence, raw, and processed) and change the paradigm from "process, exploit, and disseminate" to "post before processing." All data is advertised and available for users and applications when and where they need it, allowing users and applications to search for and "pull" data as required. As the DoD moves to a Net-Centric environment, the goal of "post before processing" will make data readily available to the user before normal processing and dissemination would have been completed, thus allowing users to make more timely and effective decisions²³. This paradigm will require standards for data that allow users to easily discover and understand the data assets of the enterprise, and use the data correctly, effectively, and in a timely manner. In addition, data will be available to a broader base of qualified users, not just the current users of the I&E data assets. These unplanned or unanticipated users will require sufficient understanding of these data assets to be able to pull and analyze data for effective analysis and decision-making. This paradigm will also change the focus of data from the application that processes it to the role of the data as it applies to the enterprise, and how it is processed and used by the enterprise.

C.3 Unique identifier

On 29 July 2003, the acting Under Secretary of Defense, Acquisition, Technology and Logistics (AT&L), issued a policy for the unique identification of items purchased by the DoD, including new equipment, major modifications, and re-procurements of equipment and spares. The policy states that unique identification is a mandatory requirement for all solicitations issued by DoD on or after 1 January 2004. A unique identifier (UID) is a set of data for assets that is globally unique and unambiguous, ensures data integrity and data quality throughout its life, and supports enterprise business applications and users.

The DoD must, of necessity, uniquely identify the items to which it takes title to provide for better asset accountability, valuation, and life cycle management. The same is true for real property assets.

For the I&E Community, the Real Property Unique Identifier (RPUID) becomes the key element in DoD's Real Property Information Systems that distinctively and uniquely identifies a piece of land, a building, structure, linear structure, or other real property improvements in which DoD has a legal interest. The RPUID allows related data from across the spectrum of DoD business areas to be linked to specific real property asset records.

Unique identification of real property assets provides DoD with the source data to facilitate accomplishment of the following:

- Capture timely, accurate, and reliable data on real property assets;
- Improve life-cycle asset management; and

22 Management Initiative Decision 905, Net-Centric Business Transformation and eGovernment, December 24, 2002, p. 4.

23 Memorandum, DoD Net-Centric Data Strategy, 9 May 2003, p. 3.

- Track real property assets within DoD for financial accountability purposes and asset lifecycle management.

The I&E Data Management Strategy uses RPUIDs where appropriate so that items of interest, e.g., real property assets, can be:

- Uniquely identified within their respective classifications;
- Tracked and managed throughout their respective lifecycles;
- Referenced by other systems within the enterprise (e.g., systems interoperability) without having to re-enter or replicate data; and
- Tracked throughout the enterprise for financial impact (e.g., audit trail).

In a logical data model, for example DoD Architecture Framework (DoDAF) OV-7, a unique identifier is simply a primary key, a method implemented in a database to differentiate one occurrence of data from all others of the same class. In the context of the database, the primary key is used as criteria to join data from multiple sources within the database based upon a common criterion (the primary key). This premise extends to multiple or distributed databases, where the primary key is extended to join data from one or more databases. Applying this to the DoD Enterprise, the RPUID becomes the primary key for the identification of real property assets within the Real Property Information Systems; the join criteria for the databases supporting I&E, RPI, RPM, ESOH, and the Military Services and Agencies; and extends to the databases supporting other Business Domains and the Warfighting Enterprise Mission Area. This concept also supports extensibility. Additional data attributes supporting real property can be added to the appropriate database(s) and are immediately accessible using the RPUID. Similarly, additional databases can be added within the enterprise to support new mission requirements. By using the RPUID, the new databases can be integrated into the real property data environment. This concept allows each database to store the real property asset data required to support its respective mission as opposed to each database maintaining the same data redundantly. This supports the vision of single point-of-entry and shared access for real property data in the enterprise.

In addition, since data is stored once, based upon the authoritative source that owns it, data integrity and reliability is increased. This is because that data is defined only once and is validated consistently against common business rules and criteria. The architecture supports the integration of real property data from multiple sources to support an enterprise view of real property assets to the user, e.g., up-to-date asset data pulled from multiple sources real-time based on the RPUID of the real property asset.

A unique identifier can be either intelligent or non-intelligent. An intelligent identifier is based on the use of characteristics such as organizational component code, facility number, facility location, facility name, state code, (either alpha or numeric), county code, etc., in the identifier scheme. A non-intelligent identifier is one that is automatically generated by computer each time a record is created. It has no correlation to the attributes entered for that record. Intelligent identifiers (those that contain some kind of information) are not permanent; they change as the criteria for their assignment changes. Non-intelligent identifiers, by contrast, are permanently assigned to an asset for data relationships and data sharing. The merits of intelligent and non-intelligent UIDs must be analyzed in each case where unique identification is required, in

conjunction with the attributes defined for the item of interest. Should unique identification be provided for an item of interest based upon one or a combination of multiple attributes, and the attribute(s) under consideration are not subject to taxonomy, classification, or categorization changes, an intelligent UID might be considered viable. If not, a non-intelligent UID would be required.

Business rules will be defined based on the recommended unique identification scheme. Each UID, scheme, and associated business rules will then be entered in the I&E Metadata Repository, published, and made available to users of I&E data assets.

The following example uses the RPUID to illustrate the benefits of unique identification. The RPI focus group research considered the advantages of both an intelligent and non-intelligent numbering scheme for the identification of real property assets. A non-intelligent number scheme is recommended as the best alternative for the RPUID. The numbering scheme will not become obsolete as the characteristics or categorization of the asset change over time. The RPUID:

- Will remain a key identifier of that asset for the life of the asset;
- Will be used by the DoD to permanently and uniquely identify all real property assets in which the DoD has an interest;
- Will be assigned to the asset, not to the owner or the installation since they may change over time;
- Will remain a part of the real property asset record for the life of the asset; and
- Does not change when criteria of assignment of the real property asset changes.

In essence, the unique identifier becomes the “link key” that allows multiple databases supporting real property to be joined. This could include for example, financial, management, and geographic information systems. Figure C-2 illustrates the integration of systems supporting real property using the RPUID.

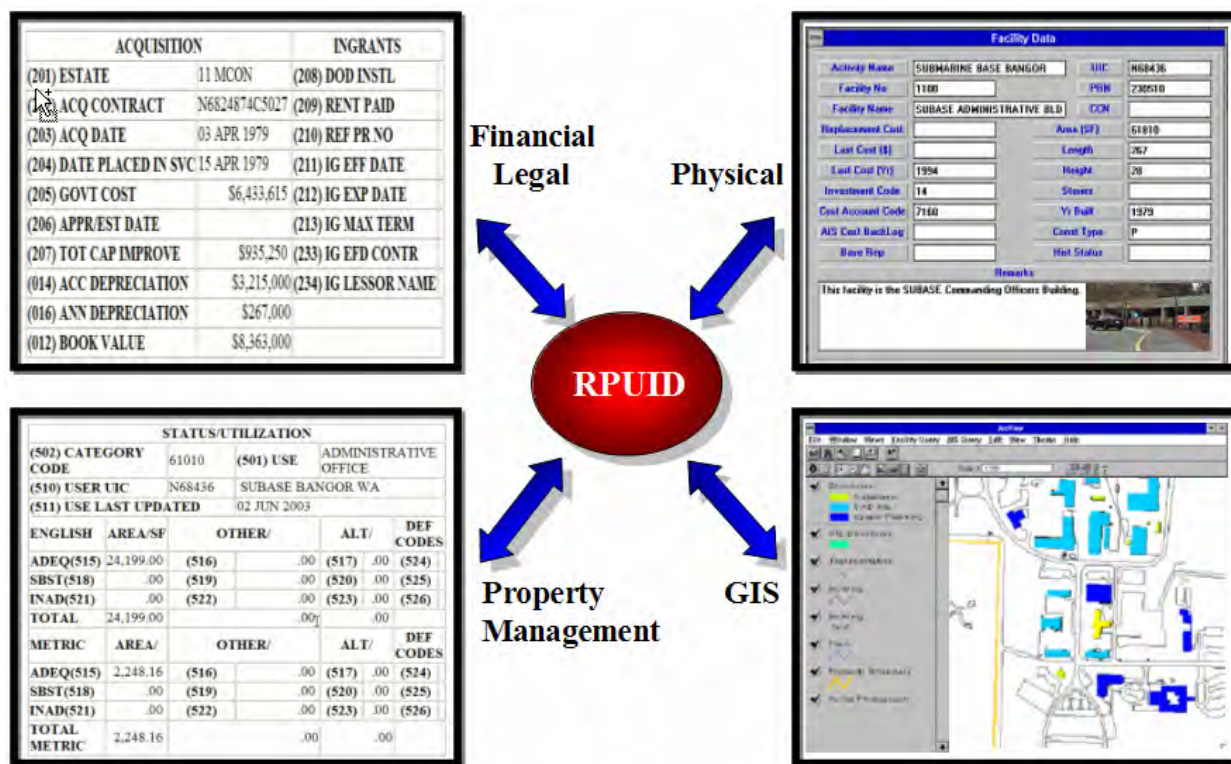


Figure C-2: Real Property System Integration Using the RPUID

Viewing real property assets and information from the perspective of the enterprise, the RPUID provides the integration point with respect to real property assets, enterprise transactions, and enterprise data. Using the RPUID, enterprise systems can provide the user with an integrated view of real property. In this case, real property asset information will be entered and stored once in respective systems supporting the mission and business requirements of the various DoD Business Domains and the Warfighter Enterprise Mission Area. No one system will contain all data related to real property assets (financial, legal, and physical) nor will any one system maintain the complete audit trail needed to track the financial history of real property assets.

Instead, the RPUID is the common key or identifier of the real property asset. Using the RPUID, an integrated view of the real property asset can be presented to the user, offering him/her data pulled from the systems that support the lifecycle of real property assets. These systems can be the suite(s) of systems supporting the DoD Business Domains and the Warfighter Enterprise Mission Area, and/or the suite(s) of systems used by the real property COIs (the Military Services and Defense Agencies) supporting the management of real property assets. Figures C-3 and C-4 illustrate the integration of systems supporting real property using the Real Property Inventory RPUID.

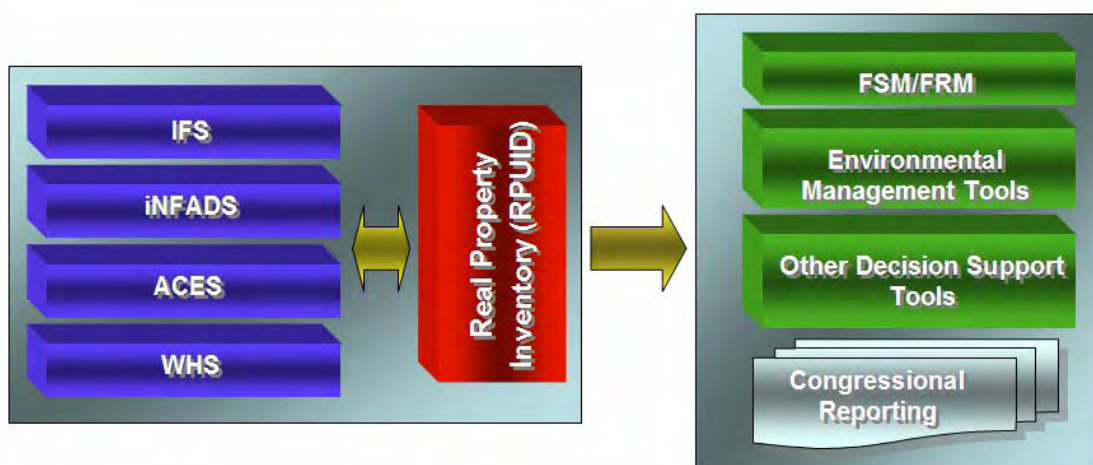


Figure C-3: Integration of COI (Military Services and Defense Agencies) Systems Supporting Real Property Assets



Figure C-4: Real Property Inventory Integration in the Enterprise Using the RPUID

All real property assets identified in the Real Property Asset Taxonomy, in which DoD has an interest, will be assigned an RPUID. The RPUID will complement and not replace the commonly used identifiers such as Facility Number or Building Name. In this manner, users of the “To-Be” solution will be able to identify and access real property assets as they do today rather than having to learn the RPUID key assigned or be knowledgeable of its scheme or

assignment. The RPUID will provide the enterprise with the key to the history and audit trail for financial transactions and physical changes related to real property assets over their lifecycles. Since the RPUID is permanently assigned to the asset and never changes, the asset's change history and financial audit trails remain consistent.

An RPUID will be required for all existing and future assets in the DoD and will be archived with the asset when the DoD relinquishes its legal interest.

C.4 Core Data Elements

A current problem with the systems used by the Military Services and Defense Agencies for the reporting of their respective real property assets is the lack of standardization with respect to the definitions, attributes, business rules, and validation criteria used for real property data²⁴. As a result, consolidated reporting of assets in which DoD has an interest requires data calls, and the subsequent timely and costly consolidation, translation, and validation of data using complex business rules into a common format for analysis and reporting. This process affects the timeliness and reliability of data and impacts cost effective planning, analysis, and decision-making.

The focus groups identified taxonomy for real property assets, and then classified real property items according to this taxonomy. The RPI taxonomy is depicted in Figure C-5.

²⁴ Assessment of DoD Real Property Information Systems, prepared for the Office of the Deputy Under Secretary of Defense for Installations and Environment, August 8, 2001, p. 3.

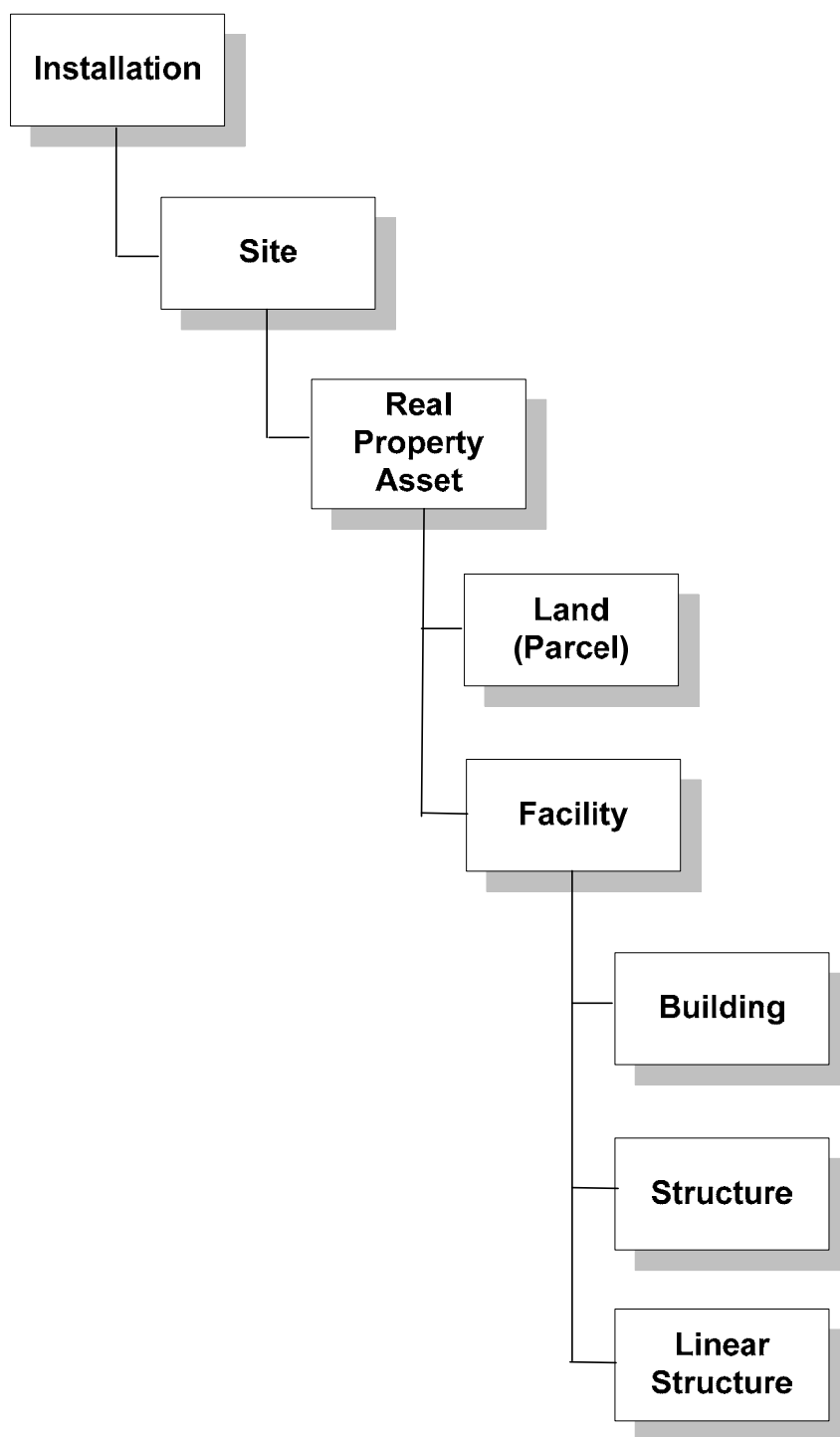


Figure C-5: Real Property Asset Taxonomy

A major objective of the focus groups is to identify the core data elements that will form the basis of the RPI common data model in support of the I&E Domain. The common data model reflects the business view, business vocabulary, classifications, and business rules that provide a common basis for the understanding of real property information and data.

Common data models build upon traditional metadata by capturing the formal meaning of data in agreed-upon business terms. This eliminates Component-specific vocabularies, definitions, business rules, and validation criteria. This metadata addresses both the business described above and the technical attributes of the data, e.g., data type, data length, domain rules (pick lists), optionality, and uniqueness. Common data models help to eliminate semantic issues regarding information and data assets by having a common reference model for data assets. This in turn eliminates community-specific definitions or interpretations of these assets. Data resources used for metadata analysis included various data assets associated with existing systems, legacy systems, interfaces of the Military Services and Defense Agencies, as well as new development efforts and pilots. The RPI common data model is used to define the core data elements (data elements shared across more than one community).

The RPI focus groups will continue to work with legacy system owners, ERP development teams, and local metadata repository owners to ensure that the RPI common data model includes the appropriate data asset meanings and business rules.

Using the data reporting requirements of Draft DoDI 4165.14 (dated August 2002), data maintained in the systems of the Military Services and Defense Agencies and the taxonomy described above, a common data model was constructed. This model reflects:

- Entities defined for the real property asset objects identified for the RPI entities (e.g., Site, Facility, and Land);
- Relationships defined between these entities to show dependencies and cardinality (e.g., One-to-One, One-to-Many, etc.); and
- Business rules defined for the existence of each asset type (e.g., entity), and how each entity is related to the other.

Using the common data model described above, attributes, or core data elements, have been identified to characterize and define real property assets. These attributes are broken into the following three categories:

- **Financial.** Acquisition date and cost, capital improvements, sustainment, disposal, and salvage;
- **Legal.** Deeds, metes and bounds, restrictions; and
- **Physical.** Asset name, geo-political and geo-spatial location information, size, dimensions, capacity, construction type, usage type, and quality rating.

The core data element attribute taxonomy is depicted in Figure C-6. It should be noted that the taxonomy is generic. There is an overlap between some attributes in each classification, for example, interest code has financial as well as legal implications with regard to real property.

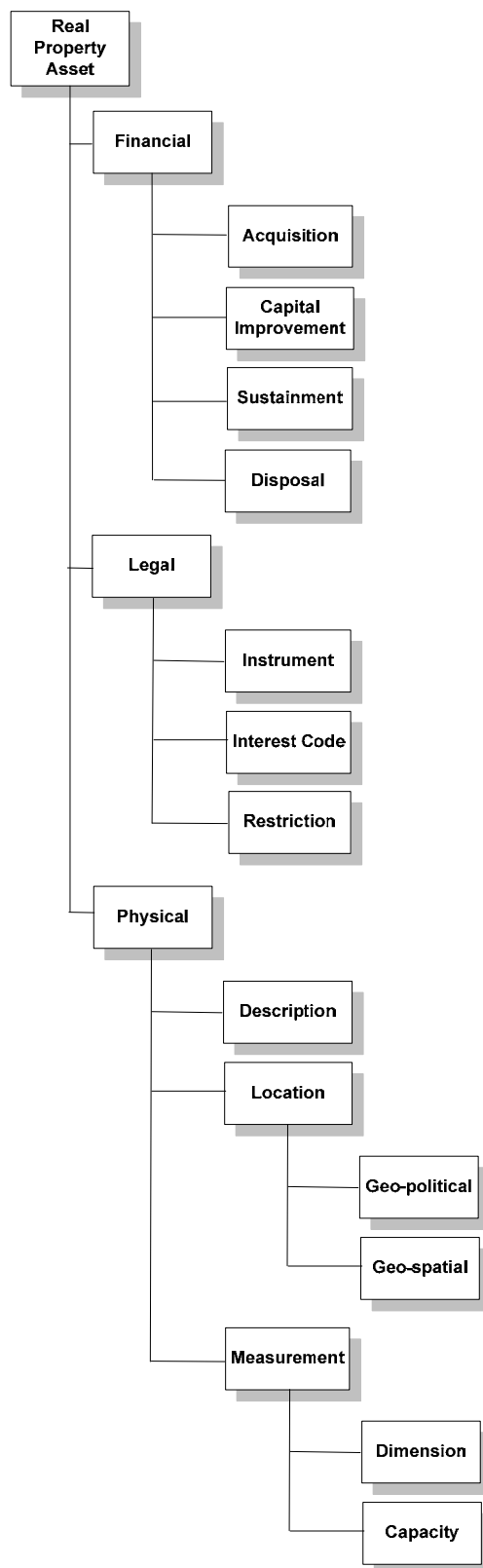


Figure C-6: Core Data Element Attribute Taxonomy

In addition to the RPI common data model, a logical data model has been developed for the I&E Community. The logical data model is one of the DoDAF architectural products included in the Operational Views and is referred to as the OV-7. The OV-7 documents the data requirements and structural business process rules of the architecture's operational view. It describes the data and information associated with the information exchanges of the architecture within the scope and to the level of detail required by the architecture. The OV-7 representing real property is a decomposed view of the RPI common data model and contains data elements, primary and foreign keys, characteristics and attributes, and relationships for the objects contained within the logical data model.

The OV-7 is created in third normal form. This means that all attributes identified for an entity depend on the primary key of the entity only. This concept breaks data down into elementary entities or data objects, with relationships defined between objects. It also promotes the sharing and reuse of data objects in the enterprise data model. For example, creating a data object called "Real Property Asset" that includes attributes that define acquisition, (e.g., data and cost) eliminates the use of these attributes to define acquisition attributes for "Personal Property Asset" or "Intangible Assets." However, defining an elementary object called "Acquisition" with the attributes data and cost, allows this data object to be shared by the data objects "Real Property Asset," "Personal Property Asset," and "Intangible Asset."

Based on the developed taxonomy, the identified core data elements will allow the DoD to identify and track real property assets for which it has a legal interest over the life of the asset. The core data elements of the RPI will form the basis for the systems used to support the capabilities and mission of the I&E Community, including RPM and ESOH. In addition, the I&E Community and its COIs will be the authoritative sources for the real property inventory core data elements in support of the Business and Warfighter Enterprise Mission Areas. Figure C-7 illustrates the lifecycle of real property assets and the business and data requirements of the lifecycle.



Figure C-7: Core Data Element Support for the Real Property Asset Lifecycle

These core data elements define common vocabulary, definitions, validation criteria, and business rules to ensure that real property assets are described consistently across the Military Services and Defense Agencies, with no data conversion, translation, or transformation required. These features will enforce standardization with respect to real property data in the “To-Be” environment by validating data upon initial entry into the system and when update of the data occurs.

To support the identification and physical characteristics of real property assets, standard measures have been defined. For example, utilities typically comprise the basic infrastructure of an installation or are part of its general physical plant. In the RPI, utilities are considered “Network Facilities” or “Linear Assets.” Information required for maintenance, management, and ongoing operations will be created and retained by the users of the data in the IM System (e.g., Public Works Department) or the accounting and finance department. The data elements included for the RPI are the fundamental, core inventory data items required for overall asset accountability and real property management. General data elements and attributes are required for each system as well as for the individual assets within each sub group, including the appropriate units of measure and other physical characteristics. Segmenting the linear assets will allow the RPI to inventory defined units or lengths of the asset, an important element in not only tracking existing assets but also their general characteristics. Segmentation will provide additional standardization with respect to real property assets and the related data across the Military Services and Defense Agencies.

The RPI core data elements simplify analysis and reporting of the real property inventory. See Figure C-8. Since the data will be real-time and up-to-date with no translation or conversion required, data reliability and availability is a given. The core data elements will be required for all real property assets in which DoD has a legal interest. They are the fundamental inventory data items required for overall asset accountability and real property management. Using the I&E focus groups, as additional data assets are identified and requirements are developed, the RPI common data model will be extended so that consistent and reliable data is available, and stewardship and reporting responsibilities are fulfilled.

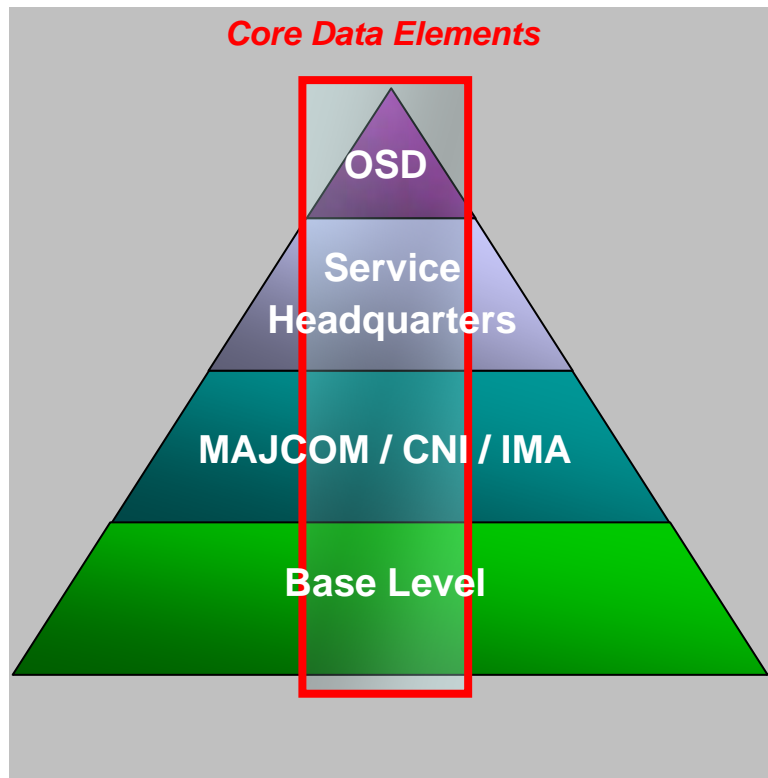


Figure C-8: Core Data Elements Within the I&E Communities

Because the information and data of the I&E Community are its most important assets, the lifecycle of those assets must be managed. There is a cost associated with each information and data asset maintained, from the resources required to support the lifecycle to the disk space required for storage and archive. The COIs supporting the I&E Community must weigh the cost of data lifecycle maintenance against the use and benefits of these data assets. When the maintenance cost exceeds the benefits, archiving of such data is recommended.

C.4.1 RPI Common Data Model Structure

Real property assets are the fundamental, atomic entities of the RPI. The RPI common data model provides a hierarchical structure to support real property assets that in turn support the accounting, management, and inventory aspects of the RPI from the perspective of the I&E Domain, Military Services, and Defense Agencies. The structure provides a model for discovery and drill-down from the highest attributes of real property to the specific details of each asset. This provides a view of real property that is well suited for planning, analysis, and reporting from the perspective of the real property user communities. Conversely, the structure also supports the roll-up of real property data for use by the same communities.

In the RPI common data model, Sites are defined as physical geographic entities comprised of contiguous land parcels upon which facilities may be constructed. Sites, in turn, are grouped to form Installations. For the purpose of the RPI, Installations do not necessarily represent geographic entities, but are groupings of one or more Sites that support management and mission directives identified by the Military Services and Defense Agencies.

In the RPI common data model, the entity hierarchy is represented by the use of parent-child relationships between entities. Each parent is identified by a natural or artificial primary key that is also the foreign key of the child/children. The primary and foreign keys of the parent and child entities are the basis of the relationship between the entities.

Cardinality is the type of relationship between the parent and child records of a relationship, identified as One-to-One (1:1), One-to-Many (1:Many), or Many-to-Many (Many:Many). The INSTALLATION and SITE entities are defined by primary keys consisting of unique identifiers. In this example, referential integrity between the INSTALLATION and SITE entities is enforced using the primary key of the INSTALLATION entity, Installation Unique Identifier. Since this is the foreign key in the SITE entity, Installation Unique Identifier (FK), the relationship is complete. In the model, (FK) following an attribute name indicates that the data element is a foreign key.

As described previously, unique identifiers will be assigned to Installations and Sites for the life of the entity. While providing a hierarchical view of the INSTALLATION and SITE entities, this structure also provides flexibility with respect to support of organizational and mission changes that affect real property. For example, Installations can be closed or realigned. Sites can be closed, realigned, or merged. The effect of these changes on the affected entities is reflected in the model using the foreign key Installation Unique Identifier. If a SITE is realigned from one INSTALLATION to another, the foreign key Installation Unique Identifier (FK) in the SITE entity is updated with the value of the primary key Installation Unique Identifier of the new parent INSTALLATION. The SITE is then a child of the new parent INSTALLATION.

RPI assets are maintained in the entity REAL-PROPERTY-ASSET, identified by the primary key RPUID. RPI assets are children of the SITE with which they are associated. In the model, this is represented by the parent SITE, (identified by the primary key Site Unique Identifier), and the child REAL-PROPERTY-ASSET entities, related by the foreign key Site Unique Identifier (FK). The relationship between SITE and REAL-PROPERTY-ASSET is One-to-Many.

The “To-Be” RPI data will never be deleted. It will be archived to maintain auditability of the system. In the case of archiving, RPI records will be updated to reflect the fact that the DoD has relinquished its interest in the real property asset. The archive data will indicate that the data no longer represents an asset of the DoD. The archived data will be maintained so that it can be retrieved should the need arise, e.g., for audit trail purpose.

Real property can be in one of two mutually exclusive forms: facility or land, supported by the entities FACILITY and LAND respectively. In the RPI common data model, the REAL-PROPERTY-ASSET entity contains attributes that are common to all assets irrespective of asset type code, such as RPUID, RPA Placed In Service Date, RPA Name, RPA Financial Reporting Organization Code, and RPA Interest Code. The FACILITY and LAND entities contain attributes that are specific to the type of asset: facility or land. The relationship between the parent REAL-PROPERTY-ASSET and child FACILITY or LAND entities is One-to-One, based on the RPUID.

A facility can be in one of three mutually exclusive forms: building, structure, or linear structure supported by the entities BUILDING, STRUCTURE, and LINEAR-STRUCTURE respectively. In the RPI common data model, the FACILITY entity contains attributes that are common to all Facilities irrespective of the type. The BUILDING, STRUCTURE, and LINEAR-STRUCTURE entities contain attributes that are specific to the type of asset (building, structure, or linear

structure). The relationship between the parent FACILITY and child BUILDING, STRUCTURE, and LINEAR_STRUCTURE entities is One-to-One, based on the RPUID. The BUILDING_MODULE entity is a child of the BUILDING entity, and is used to support decomposition of the real property of type building, such as housing or a network facility. For example, a housing building is a single facility, but can be comprised of one or more units, e.g., apartments. The BUILDING to BUILDING-MODULE relationship can be One-to-Many, allowing a real property asset of type Building to be decomposed into the units that comprise it.

Each entity defined in the RPI common data model will be composed of attributes that define the financial, legal, and physical characteristics of the real property asset in the RPI. Through the real property asset lifecycle, assets are acquired, sustained, improved, and finally disposed. Throughout the life of the real property asset, the attributes of the RPI record(s) will be updated to reflect changes in the asset with respect to financial (e.g., capital improvement and disposal) legal transactions (e.g., restrictions and disposal), and physical changes (e.g., capital improvement and partial disposal or demolition). In this manner, the history of changes to each real property asset in the RPI will be maintained for planning, analysis, and reporting. Audit trails and mechanisms will be maintained to indicate the source and time of each change to real property asset records, as well as archiving of data to indicate asset characteristics throughout the lifecycle of each real property asset. For example, in the case of the dividing of a land parcel, archiving of the original land parcel data will be performed in such a way that a “before” and “after” image of the parcel data is available to users to support analysis, reporting, and audit trail maintenance.

Data standards recommended for the RPI have been defined in the common data model and are included in Attachment D of this document. These standards have been proposed by the I&E COIs to resolve issues regarding consistency and lack of collaboration experienced by the real property systems currently in use. These standards include the following.

- **Common vocabulary and definitions.** Promotes understanding of real property data and the characteristics that define it. The vocabulary and definitions proposed for the RPI are based upon the vocabulary of the Enterprise Business Process Model (EBPM) and recommendations of the I&E RPI COIs. The DoD EBPM provides the architectural framework for end-to-end business processes. The EBPM provides the high-level business rules and relationships that unify processes across the DoD Business Mission Area (BMA). The EBPM has been developed incrementally using teams of SMEs working in facilitated sessions to identify leading practices, define core standards, discuss alternative approaches, and build end-to-end business solutions. The teams have included SMEs from the Domains, as well as affected DoD Components.
- **Validation criteria.** Referential integrity, range, and uniqueness checks will increase the quality and consistency of real property data by using standard edit and validation tools to catch data errors and anomalies at each point that data is entered or changed.
- **Standard data.** Domain rules and default values will control the population of data within the “To-Be” environment. Domain rules consist of pick lists and are pre-defined values that users select typically through pull-down value lists. The domain rules defined by the real property COIs will replace those currently used by the Military Services and Defense Agencies, providing a standardized and common method for identifying and defining real property assets in the RPI. This eliminates “free format” entry of data by

users, and increases the quality, consistency, and usability of data for analysis and reporting.

- **Authoritative sources.** To identify standards for the RPI, authoritative sources have been used to provide consistency and integrity with respect to the “To-Be” solution and the data that it will support. For example, the Federal Accounting Standards Advisory Board and DoD Financial Management Regulation have been used as the basis for the definition of accounting business rules. Sources including Federal Information Processing Standards and the DoDI have been used to help define the domain rules.
- **Business rules.** Business rules define the events, triggers, and processing of data to support the business processes defined in the Enterprise Business Process Model. In addition, business rules defined for the RPI will be used to populate data within the RPI. Authoritative sources will be used to insert and update data within the RPI based upon events defined in the “To-Be.” For example, when a construction contract is authorized to build (create) a real property asset, an RPUID will be created for the new asset and a template record created in the RPI. The initial data created for the asset in the template real property record will be populated by contract data entered by Acquisition. This will improve the consistency and quality of data within the RPI as well as within the enterprise since the data will not need to be re-entered. Data will be entered once and then shared.